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dimension, then certain results must follow which can be demonstrated in the three-dimensional world—then demonstrate them. For instance, if a space be completely closed as regards its three apparent dimensions, but if nevertheless there is an unapparent fourth dimension, in the direction of which it is wide open, then a solid body could be introduced into that space along that fourth dimension. Search for an instance of such a phenomenon! Some spiritualists claim to have cases on record.

Indirect evidence, however, is not conclusive, unless it can be shown that no other explanation is possible. And, trickery apart, explanations other than a fourth dimension, but perhaps no less marvelous, would, in this case, be conceivable.

W. E. AYTON WILKINSON.

THANATPIN, PEGU, BURMA.

#### A MULTI-DIMENSIONAL SPACE CONCEPTION.

(A Translation.)

*To the Editor of The Monist:*

First of all I must express my thanks to you for the unusually sympathetic words with which you commented upon my new geometrical theory in the April number of *The Monist* (p. 316). For this reason I feel the more in duty bound to call your attention to one place in the review which is inaccurate because of my own fault.

After you placed an emphasis, quite rightly, upon the fact that my theory "beats Riemann's curved space and also Bolyai and Lobachevsky," you add that "even the believers in the fourth dimension must confess that they are left behind." This is evidently founded upon the oft repeated statement in my book that extended space can have not only four but even five and six dimensions but no more. But in a correction which I have added as an additional independent supplement I have corrected this statement to the effect that the supposed five- and six-dimensional octahedral space would have to be identical with the quadratic five- and six-dimensional space; and that since this last is not possible, extended space can not have more than four dimensions.

Nothing indeed has been gained *in principle* by this correction, for in principle only the assertion which is carried out in the book is correct, namely that *extended* space can not exceed a definite

number of dimensions. The believers in the fourth dimension would find themselves deceived if in their statements they were henceforth to rest upon my geometry; for although according to their principles objective space must necessarily have four dimensions if it be eternal, it follows at the same time from the same principles that this can not be the case, and that if the multi-dimensional world is eternal it could exist originally only in  $n$ -dimensional *unextended* space as I have pointed out in my book (pp. 264-6).

DR. BRANISLAV PETRONIEVICS.

PARIS, FRANCE.